

GRANARIES ANCIENT AND MODERN

MARIN (B.), VIRLOUVET (C.) (edd.) *Entrepôts et trafics annonnaires en Méditerranée. Antiquité-Temps modernes*. (Collection de l'École Française de Rome 522.) Pp. viii + 406, figs, ills, maps. Rome: École Française de Rome, 2016. Paper, €30. ISBN: 978-2-7283-1246-7. doi:10.1017/S0009840X18001312

This volume presents nine studies resulting from a research project and a series of related conferences on ancient and early modern granaries, carried out between 2006 and 2010 (from the same research project stemmed other papers published elsewhere; the studies concerning Antiquity are in *MEFRA* 120 [2008], 109–38; 257–336). This collection of essays does not aim to present a systematic overview, but, by maintaining the Antiquity/Modernity approach of the conferences from which it was generated, it offers refreshingly new perspectives for economic historians.

In the introduction the editors describe how previous research on the grain supply of ancient and early modern Mediterranean cities led this group of scholars to launch a fresh research project – one that investigated the granaries as intermediary points between rural production and urban consumption, between good crops and bad crops, between agrarian surpluses and their conversion into money, and between private greed and public needs (one may here recall G. Rickman's classic book *Roman Granaries and Store Buildings* [1971]).

The collection is divided into two parts. The first, 'Synthèses', comprises four papers, each co-authored by two or three specialists of different periods. These essays explore structural aspects concerning the function of the granaries in ancient and early modern Mediterranean eras: their spatial distribution, typologies and functions, stocking techniques, and administration and role in Rome's economic life.

The first essay, 'Distribution géographique des entrepôts, localisations, réseaux: étude de cas' by M.-B. Carre and S. Laudani, explores the spatial and hierarchical relationships among granaries from two groups of regions – Northern Italy, Lycia and Africa for the Classical era, and Sicily, Venice and Madrid for the modern era. For both ancient and modern times, historians have recognised the tendency to locate a certain number of granaries at the intersections of different systems of transport (river/sea, land/sea, land/river). Very often, the erection of a new granary was due to the intervention of a political power trying to cope with a demographic imbalance. Given their architectural monumentality, the granaries were also bearers of a political message: granaries belonging to the same distributive circuit were organised in a hierarchical relation based on their position in the circuit.

J.U. Sanz and C. Virlovet, 'Formes et fonctions: essai de typologies', review various storehouse typologies, which depended on the foodstuffs stored, climate, position in the distributive circuit and historical circumstances. While the granaries in the more humid regions were outfitted with architectural measures to keep the grain dry and ventilated, in more arid areas the grain was sometimes sealed in underground silos, to be accessed during famine crises. Sanz and Virlovet warn that it may be misleading to infer the capacity from wall thickness and call attention to the fact that granaries sometimes functioned as marketplaces as well. Moreover, they argue, depending on historical circumstances, granaries could be created from buildings that were not intended as such, and original granaries could later be reused for different purposes.

In the opening remarks of their chapter, 'Stockage et techniques de conservation des grains', G. Geraci and B. Marin caution against assuming an average rate of loss during storage, without also taking into account the size and type of granary (above ground or

underground, intended for long-term or short-term storage etc.), the climate or the type of stored grain. They also point out that in the case of the above-ground granaries, the laws of statics and the necessity of shovelling the grain every so often meant that most of the space inside the granary cells would have remained empty. Their review of the ancient evidence offers a synopsis of the various expedients practised in antiquity to prevent, restrain or adjust the deterioration of the stored grain.

R.P. Corritore, B. Marin and C. Virlovet, 'Fonctionnement administratif et économique', address the administrative and economic aspects of granary management. In their paper, they disprove the prevailing assumption that only public authorities owned or operated granaries and the large stores of grain. Quite the contrary, they argue that the storage and management of grain resources relied on a more subtle and volatile mix of public and private subjects, which could change according to circumstances. Thus, the granaries played a central role in a market characterised by a high degree of complexity.

The second part of the volume, 'Études', offers five essays on specific themes. The first, 'Les *Grandi Horrea* d'Ostie' by G. Boetto, E. Bukowicki, N. Monteix and C. Rousse, chronicles the history of Ostia's *Grandi Horrea*. A thorough re-examination of the evidence leads the authors to date the construction of the building to the first quarter of the first century AD and, based on an analysis of subsequent modifications, to distinguish seven construction phases, the last (and most important) of which goes back to the late second century AD and to the early Severan age. We may observe that the construction and the most important remodelling phase coincide with periods of great public concern regarding Rome's grain supply (Tac. *Ann.* 4.6; 6.13; SHA *Sev.* 8.5; 23.2; *Heliogab.* 27.7). This essay also explores various functional aspects of the building: the logistics of the grain transfer from seagoing vessels to the *Grandi Horrea* and from the *Grandi Horrea* to the riverine ships, the maintenance of the building and the storage of the grain (with a calculation of the storage capacity, estimated in the region of 254,000–375,000 *modii*).

The relevance of the production and export of Sicilian grain from the fifth century BC to the eighteenth century AD is the focus of 'Entrepôts céréaliers en Sicile de l'Antiquité à l'époque moderne', by S. Laudani, S. Bouffier, J. France, L. Arcifa, V. Vigiano and N. Blando. For pre-Roman Sicily research is not easy. The importance of the granaries in the Greek cities of Sicily is revealed by use of the term *rhogos*, a word peculiar to Western Greek vernaculars. However, the long history of Sicilian *rhogoi* – from the first occurrence of the word in Epicharmus to its very late reappearance as a toponym in the *Little Byzantine Chronicles* (with only the fourth-century BC *damiosios rhogos* epigraphically attested in between at the Italian site of Heraklea) – is totally obscure. The absence of significant archaeological evidence (the debatable cases of Entella, Adranone and Morgantina notwithstanding) suggests that most of the store buildings were built of wood and left no trace. Despite the crucial importance of Sicilian grain for republican Rome, and despite the precious quantitative data provided by Cicero's speech *Against Verres*, we have only vague indications regarding the port infrastructures that housed Sicilian grain before its transport to Rome. The medieval and early modern evidence suggest comparisons both *per similitudinem* and *per differentiam*. The 200,000–300,000 of *salme* exported in the sixteenth century represent a magnitude comparable to the 6,800,000 *modii* meant for Verres' annual shipment to Rome. On the other hand, the generic instruction that the grain for Rome had to be brought 'to (navigable) water' contrasts with the list of medieval *caricatori* (officially designated port facilities from where the Sicilian grain was exported). It is remarkable that, in several of the *caricatori*, underground granaries are also attested. The underground granary could not have functioned as a storage

facility for grain that was intended for consumption within the year. Rather, it was designed to hold in reserve surplus grain. The underground granaries of the *caricatori* highlight the different purposes of Sicilian grain in Roman and medieval/modern times. In Roman times, most of the Sicilian grain surplus was sent to Rome as tribute, and Rome was easily able to absorb all of Sicily's surplus. In medieval/modern times, however, Sicilian grain was exported as a commodity in multiple directions, since there was no single urban centre as large as Rome. In good years, when the price of grain dropped, it would have been expedient to reserve part of the surplus in anticipation of lean years and high prices. One may wonder whether the short-term violent variations in the volume of exported grain between 1510–1550 (see p. 261) may be explained in this way.

G. Vertecchi, 'Gestion et administration des entrepôts des grains à Venise au XVIII^e siècle', outlines the complex management of the grain supply in eighteenth-century Venice: an overview of the Venice granaries; the distinction between the grain *per conto di consumo* (immediately released for the making of bread or *biscotto*), and the long-term reserves *per conto di deposito* (stored for future shortages); the use, along with wheat, of millet and corn; and the expediency of *biscotto* over bread, especially for soldiers of the fleet. The paper also examines such issues as the losses of stored grain, the function of the administrator of all the Venetian public granaries (the *masser ai formenti in Terra Nova*) and the profits or losses experienced by the administrator while in office.

E. Da Gai and G. Vertecchi, in 'Un document inédit sur les capacités de stockage des entrepôts: comparaison entre Rome et Venise', illustrate how, in a 1788 document of the *Provveditori alle Biave*, the storage capacity of the *Terra Nova* granaries in Venice was calculated based on an analysis of the surface of the cells and three possible ways of storing the grain. They then apply the same method to estimate the storage capacity of the *Granaio Clementino* (built in 1705) in Rome.

J.U. Bernardos Sanz and J.A. Mateos Royo, in 'Les entrepôts de céréales en Espagne à l'époque moderne: contrôle public et marché préindustriel', outline the evolution of public granaries in modern Spain, a region characterised by uneven productivity and ill-connected markets, where since the Middle Ages the local authorities had built public granaries to handle the constant insufficiency in grain supplies. Urban development in this region fostered the construction of granaries (*pósitos*), usually by the municipalities but also by private charities (*pósitos pios*). However, the acquisition of grain in times of famine was a very expensive practice and barely sustainable in the long run – hence the interventionism of the Bourbons, the creation of the *Superintendencia General de Pósitos* (1751) and royal oversight of the grain trade.

Although the volume does not aim at a coherent and systematic synopsis of the history of the granaries in the Mediterranean, it offers a multilateral approach to the subject and a pioneering example of interdisciplinarity.

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